

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A reduced self inductance signal cable, ~~further~~ comprising:

a tube having an internal conduit; and

~~at least one conductor, the~~ a first conductor located in the internal conduit ~~of tube~~ and having a nonlinear structure in which ~~is arranged such that at least two~~ at least two segments of the first conductor are arranged ~~such that at least a first and second~~ as adjacent segments of the first conductor and conduct current in opposite physical directions such that the magnetic field in the first adjacent segment negates the magnetic field in the second adjacent segment such that self inductance in the first conductor is reduced;

whereby frequency group delay in ~~[[a]]~~ the first conductor of a signal cable is reduced due to the reduction in self inductance in the conductor by using one segment of the first conductor to negate the magnetic field of another segment of the same first conductor.
2. (Currently amended) A signal cable, as in claim 1, wherein the void in the tube which is not occupied by the first conductor is substantially filled with a gel.
3. (Currently amended) A signal cable, as in claim 2, wherein the first conductor is formed such that the adjacent segments of the first conductor are substantially parallel to one another.
4. (Currently amended) A signal cable, as in claim 3, wherein the first conductor is bent ~~at~~ approximately 90 degree angles ~~to form the~~ such that it forms adjacent ~~parallel~~ segments of the conductor that are substantially parallel to one another.

5. (Currently amended) A signal cable, as in claim 4, wherein the first conductor is bent with curved corners.
6. (Currently amended) A signal cable, as in claim 2, wherein the first conductor has a substantially sawtooth pattern.
7. (Currently amended) A signal cable, as in claim 2, wherein the first conductor is bent such that adjacent segments are arranged that angles that are obtuse or acute to one another.
8. (Currently amended) A signal cable, as in claim 2, wherein the structure of the first conductor is held in place by securing means that secure it to the tube.
9. (Currently amended) A reduced self inductance signal cable, ~~as in claim 2, wherein~~ comprising:

a tube having an internal conduit;

a first conductor located in the internal conduit and having a nonlinear structure in which at least two segments of the first conductor are arranged as adjacent segments of the first conductor and conduct current in opposite physical directions such that the magnetic field in the first adjacent segment negates the magnetic field in the second adjacent segment such that self inductance in the first conductor is reduced;

the void in the tube which is not occupied by the first conductor is substantially filled with a gel;

~~at least two conductors are~~ a second conductor in the internal conduit of the tube; and

the ~~conductors~~ first conductor and the second conductor are secured together by ties;

whereby frequency group delay in the first conductor of a signal cable is reduced due to the reduction in self inductance in the conductor by using one segment of the first conductor to negate the magnetic field of another segment of the same first conductor.

10. (Currently amended) A reduced self inductance signal cable, ~~further~~ comprising:

a tube having an internal conduit;

~~at least one conductor, the~~ a first conductor located in the internal conduit of tube and having a nonlinear structure which is arranged such that at least two segments of the first conductor are arranged ~~such that at least a first and second~~ as adjacent segments of the first conductor such that they conduct current in opposite physical directions in relation to one another such that the magnetic field in the first adjacent segment negates the magnetic field in the second adjacent segment ~~such that~~ and self inductance in the first conductor is reduced; and

a first ~~conductor~~ connector attached to a first end of the signal cable and a second ~~conductor~~ connector attached to a second end of the signal cable, the first and second ~~conductors~~ connectors further comprising:

a negative contact; and

a hollow positive contact, the hollow portion of the positive contact having sufficient size such that the conductor can be inserted into the hollow portion of the hollow positive contact and soldered to the hollow positive contact substantially at its end;

whereby frequency group delay in a signal cable is reduced due to the reduction in self inductance in the first conductor, and signal distortion is minimized by reducing the distance between the first conductor and the end of the positive contact.

11. (Currently amended) A signal cable, as in claim 10, wherein the void in the tube which is not occupied by the first conductor is substantially filled with a gel.
12. (Currently amended) A signal cable, as in claim 11, wherein the first conductor is formed such that the adjacent segments of the first conductor are substantially parallel to one another.
13. (Currently amended) A signal cable, as in claim 12, wherein the first conductor is bent at approximately 90 degree angles to form the adjacent parallel segments of the first conductor.
14. (Currently amended) A signal cable, as in claim 12, wherein the first conductor is bent with curved corners.
15. (Currently amended) A signal cable, as in claim 11, wherein the first conductor has a substantially sawtooth pattern.
16. (Currently amended) A signal cable, as in claim 11, wherein the first conductor is bent such that adjacent segments are arranged that angles that are obtuse or acute to one another.
17. (Currently amended) A signal cable, as in claim 11, wherein the structure of the first conductor is held in place by securing means that secure it to the tube.

18. (Currently amended) A reduced self inductance signal cable, ~~as in claim 11, wherein~~ further comprising:

a tube having an internal conduit;

a first conductor located in the internal conduit of tube and having a nonlinear structure which is arranged such that at least two segments of the first conductor are arranged as adjacent segments of the first conductor such that they conduct current in opposite physical directions in relation to one another such that the magnetic field in the first adjacent segment negates the magnetic field in the second adjacent segment such that and self inductance in the first conductor is reduced; and

a first connector attached to a first end of the signal cable and a second connector attached to a second end of the signal cable, the first and second connectors further comprising:

a negative contact;

a hollow positive contact, the hollow portion of the positive contact having sufficient size such that the conductor can be inserted into the hollow portion of the hollow positive contact and soldered to the hollow positive contact substantially at its end; and

the void in the tube which is not occupied by the first conductor is substantially filled with a gel;

~~at least two conductors are~~ a second conductor in the tube; ~~[[and]]~~ the first and second conductors ~~[[are]]~~ secured together by ties;

whereby frequency group delay in a signal cable is reduced due to the reduction in self inductance in the first conductor, and signal distortion is minimized by reducing the distance between the first conductor and the end of the positive contact.

19. (Currently amended) A method of reducing self inductance in a signal cable, including the step of:

arranging ~~at least one~~ a conductor within a signal cable such that portions of the conductor are positioned in a nonlinear fashion such that ~~at least two~~ segments of the conductor are adjacent to one another and arranged such that current in one of the segments moves in the opposite physical direction of current ~~[[and]]~~ in the adjacent segment such that the magnetic fields in the adjacent segments negate each other;

whereby structural arrangement of the conductor allows a single signal lead to create the negation of the magnetic fields and reduces self induction and frequency group delay.

20. (Original) A method, as in claim 19, including the additional step of reducing resonance by filling the voids inside the signal cable with a gel.